HOUSING ALLOWANCES AND SLOVAKIA'S SOCIAL SAFETY NET

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PREFACE

Housing allowance programs are becoming the primary mechanism for delivering government housing assistance to low income families in a number of Western countries. Because they focus resources on the poor, this approach could be extremely attractive for countries like Slovakia where substantial increases in rents in government owned housing are mandatory to maintain the viability of that housing stock.

Ministry of Labor and Social Affairs requested assistance from the U.S. Agency for International Development (USAID) to support a study of how the housing allowance approach could be applied in Slovakia. This report has been prepared in response to his request. Against a backdrop of information on current incomes and expenditure patterns, it simulates the financial impacts of alternative housing allowance program designs. It also looks at how a housing allowance program could fit into the context of the country's broader social safety net.

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CHAPTER 2

SOCIAL BENEFITS SYSTEM, CURRENT STRUCTURE AND FUTURE DIRECTION

A key challenge for the Slovakian government in the transition from a centrally planned economy to one based on market principles is maintaining and reforming income security programs. Massive dislocations associated with the economic reform process have created a need for increased support at a time when fewer resources are available.

Similar to other East European countries, Slovakia inherited an extensive system of government cash transfers designed to complement the income distribution of the labor market and to aid needy individuals and families. Before 1991, the republic's social safety net consisted of three main components: 1) pension benefits for the elderly, disabled, and widows, 2) social insurance including benefits mandated by the Labor code such as sickness benefit, and 3) income support in the form of compensatory grants. Combined these programs represented government expenditure amounting to well over 11 percent of the Gross Domestic Product (GDP) in 1991.[1]

With the initiation of market-orientated reform in 1991, the former Czechoslovakia added two new programs to an already generous safety net: an unemployment program (inclusive of other cash benefits) and a general income support program to offset the effects of price liberalization and direct subsidy reductions. These new programs, as well the three existing ones, were inherited by the Slovak republic once it broke-away from the federation in January of 1993.

At the time, Czechoslovakian safety net expenditures as a percentage of GDP were less than those of Hungary (at 16 percent of GDP) but above Poland and Bulgaria.

The budget of independent Slovakia had to be put together quickly under very challenging circumstances and without good statistical information. The original budget also relied on a revenue forecast that was based on information for the federation as a whole. Given the rapidly changing economic environment, the budget assumed a good amount risk thereby creating the potential for fiscal imbalances to develop in the various sectors. The most pressing area of concern for the government was a shortfall of revenues needed to finance a socialist-era benefits system wrought with inefficiencies and unresponsive to the needs of a market-based economy.

In order to respond the changing fiscal demands placed on the social safety net in a country undergoing major structural change, the Slovakian Ministry of Labor and Social Affairs in early 1993 began to modify the safety net programs. In so doing, the Ministry streamlined the funding mechanism of various programs as well as attempted to target benefits more efficiently. Along with these two steps, a National Insurance Company was established to manage three social security funds; health care, sickness benefits, and pensions. A fourth fund for unemployment benefits was also established independent of the National Insurance Company.

As part of this process to streamline the safety-net, the Slovakia government reformed the social security collection process by doing away with the old wage tax imposed on employers under the communist regime. Contributions to the social security fund are now distributed between the employer and the employee. Employer's social security contributions was set at 38 percent of the wage bill while the employees' was set at 12 percent. This represented a fundamental change from the previous system where wages were implicitly taxed to fund the social systems costs.[2] In addition, the government mandated that small entrepreneurs pay 50 percent towards social security (46 percent to National Insurance Company and 4 percent to the unemployment fund) using an income base set at the minimum wage level or Sk2,200/month).

In 1992, two other social safety net programs were reformed. Child benefits were better targeted while unemployment benefit eligibility criteria were better difined. Associated with the new rent increases for municipal housing in July 1992, the rent-reduction allowance for each child in the family was abolished. The term for collecting unemployment compensation was also shorten from 12 months to 6 months and the benefit reduction rate (the rate at which benefits are paid-out according to previous wages) was decreased.[3]

CURRENT STRUCTURE AND BENEFITS LEVELS

The following section describes the current (as of June 1993) structure of the Slovakian safety net system. Each of the four programs are broken into their components, giving funding levels, benefit reduction rates, and program participation numbers. Where possible, a short historical sketch is provided to show the evolution of the various programs. Table X.1 follows, providing a summary for each program by listing

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Education, legal, culture, and health and social care employees are exempt and the government, as an employer, does not pay these contributions.

In response to a worsening economy, pensions were increased in March by 3 percent plus Sk50-278/month, depending on the date of retirement while the proposed elimination of general income support for families with children was postponed.

eligibility criteria, benefit levels as well as program coverage. Lastly, a section on the proposed changes in the safety net is presented.

Income support. There are two income support programs currently in Slovakia:

- compensatory grants; and
- poverty level benefit or welfare.

Compensatory grants provided protection form rapid price increases associated with price liberalization initiated in 1990 throughout former Czechoslovakia. Originally the program was applied universally, providing compensation of SK140 per person per month. In order to offset higher energy cost, a Sk80 per month was paid to all pensioners and dependent children. The qualification criteria was later modified to include households with children and income below Sk12,000 per month while the amount of the grant was increased to Sk220 per dependent child per month.

Social welfare or income support program is designed to bring Slovakian households with very low income up to the poverty line. The poverty line is defined according to household composition criteria that includes number of children as well as number of household members. The amount of the benefit equals the difference between the household's income and the established poverty line. Benefits are granted either as cash grants or in-kind transfers. In this manner, the benefit reduction rate is set at 100 percent (the crown amount below the poverty line is replace with an equivalent amount). Officials at the local offices often make the determination concerning the amount of the benefit as well as the rate at which it is delivered.

Pensions. Pensions are not only provided for the elderly but in addition to disables persons, widows, and orphans. Thus, they are categorized into three groups:

- old-age pensions;
- disability pensions (including partial disability); and
- pensions for widows, widowers, and orphans.

There are two main criteria for collecting old-age pensions: length of employment and age. These, in turn, are broken down by category of occupation and sex. The minimum employment criteria for collecting partial pensions is 10 years and 25 years for collecting full pensions, with varying age ranges from 53 years for women up to 65 years for men. Pension benefit levels are based on the five best earning years in the 10 years previous to retirement, depending on the risks associated with the occupation. Small cash supplements are provided to pensioners with exceptionally long employment records. In addition, pensioners can earn unlimited amount of earnings over and above the pension payment without incurring a reduction in their pensions.

The coverage for disability pensions corresponds to that of old-age pension program. In order to qualify for disability pensions, the applicant must have been employed for a minimum of years, regardless of labor market conditions. The formula for computing the benefit is the same as for old-age pensions, with minimum benefit levels.

The third form of pension in Slovakia is granted to widows and orphans. The widows pensions is currently collected by over 284,000 persons and is second largest safety net pay-out, following old-age pensions. Unlike the other two pensions, the widow's pension is primarily a temporary income supplement since it is paid out only one year after the death of the spouse. In order to qualify for extended benefits, the widow must either: prove disability, care for an orphaned child, in-care of three children, is 45 years old with two children, or is over 50 years old. Pension benefits are granted for orphans through the age of 16, but can be extended up to age 26. The benefit is calculated according to the amount of the deceased parents wages at a 30 or 50 percent replacement rate.

Social Insurance. Currently, there are various grants and allowance provided under the social insurance program. These include:

- sickness benefit;
- family care benefit;
- maternity allowance;
- birth grant;
- parenthood allowance; and
- child allowance.

The main assistance category for social insurance is the sickness benefit. This benefit provides income in the case of absence from work for the following four reasons: 1) sickness; 2) work accident; 3) maternity; and 4) care of sick dependent. The current coverage provides for 70 percent of daily wages for the first 3 days (base is Sk180), 90 percent of daily wages for following days (maximum of Sk162) for up to one year. The benefit's terms and rates have not changed from those set by the social system inherited from the former Czechoslovakia.

In addition, Slovakia provides a comprehensive array of family benefits designed to, in part, encourage households to have and provide support for children. The birth grant is cash payment of Sk3,000 per child intended to cover the costs associated with giving birth. Before 1992, the birth grant was Sk2,000, unchanged from its 1975 level. The maternity benefit is paid out similar to the sickness benefit, amounting to 90 percent of daily wages for a maximum of 28 weeks (37 weeks in case of single mothers). The parenthood allowance is a cash payment of Sk1,200 per month for three months from birth for a parent who does not work. The family care benefit is provided for parents at the rate of 70 percent of daily wages for a first three days, followed by a rate of 90 percent for the following 4 days, up to a maximum of 13 days.

Unemployment Insurance. The unemployment system is one of the new social safety net programs carried over from the former Czechoslovakia, originally mandated under Federal Law 1/1991. The main eligibility criteria for the unemployed are the following: 1) registration with unemployment office, 2) willingness to accept a suitable job, 3) total period of employment at least 12 months within last three years, and 4) at least 15 years old. The benefits are calculated as 60 percent of the average net monthly earning in the previous employment for the first 3 months and 50 percent for the following 3 months, for maximum of 6

months total. (Thereafter, in theory, welfare takes over.) In addition, unemployment includes a payment scheme for those unemployed due to restructuring and for recent school graduates who have not been part of the labor pool. Up through mid-1993, financing unemployment benefits was realized through the budget thereby exempting employers from contributions.

PROPOSED SOCIAL BENEFIT CHANGES

The Slovakian social programs in place today were originally designed under a system of central planning where worker's incentives were kept at a minimum by social policies designed to rationalize wages while subsidizing the production of consumer goods and services. This system relied on an implicit employee wage tax. Within this framework, open unemployment and declared poverty were unknown and social benefits were liberal. However, in a climate of economic reform, social safety net policies need to be reformed in response to market-based incentives. The income distributive effects of the old policies will no longer work in a market-based environment where wages are used to allocate labor.

In this regard, the government of Slovakia has proposed to alter the existing social safety-net by proposing four new initiatives. As a first step, the government proposed to further tighten the unemployment eligibility criteria by extending the period of waiting once outside the unemployment office registry to three months from one month. In addition, the proposal asks the beneficiary to accept the next available suitable job or the benefits would terminate. Second, it was proposed to amend the National Insurance Law to permit collection of social security contributions on wages paid during annual leave. Third, a retirement test was proposed for pension benefits. The fourth proposal asked enterprises to assume payments for certain sickness benefits, thus passing more of the insurance obligations from the govertment to private sector. The last proposal involved amendments to child allowances by raising the current family income limit to Sk16,800 per month and by lowering the age limit for children from 26 to 18 years.

CHAPTER 4

HOUSING ALLOWANCE AND INCOME SUPPORT MODEL (HAIS)

The Housing Allowance and Income Support (HAIS) model was originally developed to assist the government of former Czechoslovakia in quantifying the impacts of a housing allowance program. The model is a comprehensive analytic tool designed to not only determine the impact of a housing allowance program but also quantify the size and scale of unemployment and income support subsidies, given pre-determined assumptions about the future changes in economic conditions and saftey-net program parameters. In addition, the model is designed so that the user can change key policy parameters for each program thereby allowing for changes in one program to effect participation rates and funding levels in the other two programs.

The HAIS Base Data File. A well conceived simulation model is only as good as the data it is supplied with. The HAIS model's base file represents the best and most up to date sample data availaible in Slovakia. These files were constructed using (1998) Microcensus and the (1989) Family Budget survey. Data items on household demographics and income came from the Microcensus files while data items on housing characteristics came from the Family Budget survey. The two files were statistically matched by an imputation process that matched household characteristics in one file with those in the other file. Monetary variables in the base file were updated through an exacting process to reflect conditions at the end of 1992.[4]

The HAIS Model Structure and Output. The HAIS model was designed so that the user can alter parameters for future economic conditions, as well as for the three saftey net program parameters including; housing allowance, unemployment, and income support. In this manner, any given set of HAIS model parameters represent an unique economic and program scenario which when simulated over an user-specified

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In the fall of 1993, a new Microcensus file will be release, reflecting sample data collected in April of 1993. Refer to Annex A for a more detailed description of these files including the process used to combine data from one file with data from the other and the updates to income variables.

period (starting with the base-period levels) produce output that shows the number of program participants and the amount of funds necessary to support each program.

Once the simulation derived from the model parameters and the base data is complete, the HAIS Model computes totals for the number of households and the amount of benefits paid for each program (unemployment insurance, housing allowance, and income support) over the following categories:

- household employment status;
- housing type;
- number of persons in household;
- occupation type of household head;
- household income.

The model also calculates the changes in eligible housing costs (compared to the base data) faced by households. Reports are then produced detailing the parameters used as inputs to the model and summarizing the totaled results described above.

[add structure of program parameters here]

HAIS Model Simulation Parameters

Macro-Economic and Unemployment Simulations Parameters. In order to compute end-period aggregate income, the model requires estimates of future price inflation and changes in real earnings for each occupation type defined in the base data file. Also, forecasts of nominal changes in other income support programs (pensions, social benefits, and other income) are required by the model for income forecasting.

In addition, the HAIS model requires estimates of future unemployment rates. Aggregate household income is effected by the how many households are expected to be unemployed therefore the model allows the user to change the percentage of unemployed relative to the total employment pool. When the model computes aggregate income it requires the user to specify what portion of the unemployed will exhaust their benefits according to the existing schedule and what portion will still be entitled to unemployment compensation at the end of the simulation period.

Unemployment compensation in Slovakia varies by the employment type and length of previous employment. In order for the model to more accurately predict future aggregate income, the model requires the user to specify the replacement rates and minimum benefit level as well as the average participation rate in the program. The average replacement rate, among the various different rates in use determines the amount of income that is replaced by the program once a household is unemployed by the model.

Housing Simulation Parameters. The housing section input screens allows the user to determine the rent and utility payments according to the current housing costs structure. Since this structure is complex, the number of parameters are varied and detailed. Base rents for each category of municipal rental housing and coops are set for both "living" and "non-living" (i.e. service) space. Other fees (related mainly to the equipment

in apartment and building services such as janitor, elevators, trash removal, and others) are specified on a per housing unit basis. "Other services" charges specified on a per square meter basis and are included as part of the rent formula.

Utilities adjustments in the HAIS model have their own input parameters. Future increases in utility costs (electricity, gas, heat, and fuel) over the model base can also be estimated and used as inputs when calculating housing allowances. In this manner, the model is extremely flexible by allowing simulations of not only increases in rent levels but increases in utility costs as well.

Housing Allowance Simulation Parameters. The HAIS model allows the user to alter the parameters of the housing allowance program. The user may include households living in cooperative apartment as part of the housing allowance calculations along with households currently residing in municipal rental units. Housing allowance program parameters can be further modified by changing the way the maximum social rent (MSR) is calculated. By choosing the current quality category schedule (I or II) of rental housing the user selects which rent is used in calculating the MSR. Floor space allowances for both living and service space, are set to determine the normative amount of total floor space for each housing unit when the model calculates the MSR. In addition, the model allows the user to include or exclude utility costs in the allowance formula by using the average crowns per square meter costs.

The second set of housing allowance parameters allow the user to change household eligibility criteria. The three parameters are: the maximum share of income devoted to housing costs, the minimum share of income devoted to housing (to discourage occupancy of sub-standard housing), and the participation rate in the housing allowance program. Combined these parameters, along with the housing costs parameter changes, determine whether or not a household is eligible for an housing allowance, regardless of their participation in the other two programs.

Income Support Simulation Parameters. As previously mentioned, the HAIS model allows the user to change the input parameters for the income support program. These inputs are set according to the current Slovak income support criteria, which stipulates a minimum household income or the poverty line, based on the ages of household members and the total number of members in the household. The model allows the user to vary the income standards applied against each household type. Given the current price fluctuations, the model provides the user with the opportunity to determine whether or not payments are indexed to price movements set in the first input screen. In addition, once the poverty line is determined, the benefit reduction rate and the participation rate is also adjustable. Finally, the model allows the user to determine which class of income among the income support programs is used when calculating benefits.

Income Distribution Simulation Parameter. The last set of input parameters allow the user to more effectively evaluate the results of the simulations. As the model evaluates the effects of unemployment, the distribution of income changes. The model's results include a tabulation of households and benefits paid according to the pre-benefit income (i.e. not including unemployment insurance, housing allowances, or income support payments). This menu allows the user to specify the distribution over which the pre-benefit income is reported. Any set of non-overlapping income ranges can be selected on either a household total or per capita basis.

HAIS Model Evaluation

The model builds its forecast by making four passes over the base data (see Figure 5.8). The following computations are done in four independent stages by:

- Updating wages, pensions, social benefits, and housing costs;
- Attributing unemployment and calculating wage and social benefit losses and unemployment insurance payments;
- Calculating housing allowances;
- Calculating income support payments.

The forecast begins by taking the base data file and revising household total incomes by updating earnings, pensions, and social benefits by the parameters specified in the model. Housing costs are also revised according to the inputs supplied to the model about predicted increases in rents and utility costs. The model starting date is determined by the time period which is represented in the base file the end-period is user specified (month and year).

Once incomes and housing costs have been brought up to date for the forecast period, the HAIS Model then simulates the effects of predicted unemployment on households. A data cell representing households with positive earnings, N_t, is divided into three sub-cells— working households, N_w; short-term unemployed households (those receiving unemployment insurance benefits), N_s; and long-term unemployed households (those who have exhausted their unemployment insurance benefits), N_l—in proportion to the unemployment

Figure 1
HAIS Model Forecast Flowchart

rate, u, and shares between short- and long-term unemployed (s and l, respectively) specified in the model parameters for the relevant occupational group.[5] Thus, the number of households in each sub-cell is given by

$$N_w = N_t * (1-u)$$

$$N_s = N_t * (1-(u*s))$$

$$N_l = N_t * (1-(u*l))$$

The working households retain the same average level of earnings; earnings for the short- and long-term unemployed households are set to zero, as are social insurance benefits (for which the unemployed are not qualified).[6] Unemployment insurance benefits, B_u, are then calculated for the short-term unemployed based on their earnings prior to becoming unemployed

$$B_u = W_e * ru$$

where W_e is the average wage prior to unemployment and r_u is the replacement rate. If the unemployment benefit calculated is less than the specified minimum benefit, the minimum benefit is applied to the households. The results are then scaled according to the number of eligible households and the participation rate for the program. Total household incomes are then recalculated for each sub-cell.

Housing allowances. To determine if households then qualify for a housing allowance, the standard floor space allowance, F_i, and associated MSR for each cell is calculated as follows

$$F_i = \sum((N * f_i) + b_i)$$

$$MSR = \sum(r_j * F_j) + \sum(c_k * F_k)$$

where N is the number of persons in the household, f_i is the space standard per person for each space type, b_i is the space standard per household for each space type, r_j is the net rent unit cost for each space type, c_k is the unit cost for other eligible housing-related costs (such as service charges, fees, and utilities).

A household qualifies for a housing allowance if MSR exceeds the maximum share of income to be devoted to housing (as specified by the housing allowance program). In other words, the housing allowance, A_h, is equal to

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Because the base data is derived from surveys carried out in 1988 and 1989, there are no unemployed households in the base data. (At that time, able-bodied persons were required by law to be employed.) Thus, the model does not have to deal with existing unemployment in the base data and only households in the NEA Pensioner and Other occupational categories (if they have no employment related earnings) might not be affected by the forecast unemployment.

The HAIS Model does not attempt to sort out the effects of unemployment on multi-earner households—households are either working or unemployed. The original data files specify which households have multiple earners, but not how their earnings are distributed between earners.

$$A_h = MSR - (r_h * Y)$$

where r_h is the maximum share of income to be used for housing and Y is total household income. If the calculated value of A_h is negative, the household receives no housing allowance subsidy. The model may also impose a minimum share of income which must be devoted to housing (in order to assure households are living in housing units of minimally acceptable quality). If actual eligible housing costs are below this minimum, no housing allowance subsidy is paid. The results are then scaled according to the number of eligible households and the participation rate for the program. After total housing allowance payments are determined, total household incomes in each sub-cell are again recalculated.

Income support benefits. Finally, the model determines which households still qualify for income support benefits. First, the poverty line, PL, for each household cell is calculated as

$$PL = \sum(N_i * m_i) + g_n$$

where N_i is the number of persons in the household in each age category, m_i is the minimum income per person in each age category, and g_n is additional minimum income related to the size of the household.

The maximum eligible income, Y_{max}, under which a household would still qualify for the income support benefit is given by

$$Y_{max} = PL / r_y$$

where r_y is the benefit reduction rate. Thus, the income support benefit is payable to households where eligible household income, Y_e, is less than Y_{max} and is equal to

$$B_y = PL - (r_y * Y_e)$$

If Y_e is greater than Y_{max}, no income support benefit is paid. The results are then scaled according to the number of eligible households and the participation rate for the program and total household incomes are updated a final time.

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ANNEX A

An Essay on the Social Safety Net

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Introduction

This paper is intended to give some applied content to ideas of transfer program design which are generally well known. Three goals of an efficient transfer program are: i) to provide adequate income to program beneficiaries, ii) to minimize budget expenditures and iii) to minimize labor supply disincentive effects of program benefits. The three goals are not mutually compatible so that compromises must be made in trying to achieve the individual goals. The compromises are incorporated in setting the levels of two program parameters: the basic level of family income guaranteed by the program and the benefit reduction rate (or marginal tax rate) associated with increased earnings.

The paper has three main parts. Part 1 reviews the simplest case of the program design problem. Part 2 presents several of the realistic considerations that intrude when program design is evaluated in an actual economy. Part 3 has some observations pertinent to the Czechoslovak economy.

The Simple Case

To help frame the subsequent discussion, it may be helpful to review some basics in welfare program design. Initially, a very simple economy is presented. Consider an economy where family income (Y) is derived from only two sources: labor market earnings (E) and social assistance transfers (FSA). The transfers guarantee a basic income floor (G), and when there are earnings, benefits are reduced at a constant marginal rate (b) until the point is reached where transfers are no longer received (the break even point or E_0). There are income taxes (TY) for families, but these are levied only when family income exceeds the breakeven point. The income tax is levied at a constant marginal rate (t). Disposable income (YD) is the sum of earnings and social assistance payments less income taxes.

Equations to characterize this economy are as follows.

(1) $$Y = E + FSA$$

(2) $$FSA = G - bE \text{ if } E < E_0, \text{ otherwise } SAF = 0$$

(3) $TY = t(E - E_0)$ if $E > E_0$, otherwise $TY = 0$

(4) $YD = E + FSA - TY$

Initially income is set at the guarantee level for families with no earners. Then as earnings increase above zero, family disposable income increases by (1 - b) for each extra unit of earnings until the break-even point is reached. Above the break even point disposable income increases by (1 - t) for each extra unit of earnings. In the figure b and t are not equal (b exceeds t), but they could have the same values.

The two parameters of this transfer payment system, G and b, can be set in any number of ways. Their potential range of variation would likely be as follows. G could be set anywhere from the poverty threshold downward while b could be set anywhere between zero and unity.

Variation in the two parameters have clearly identifiable effects on the achievement of the three transfer program objectives. These effects can be categorized as follows:

Transfer Program Objective	Effect of an Increase in G	Effect of an Increase in b
Income adequacy	positive	negative
Minimize budget expenditures	negative	positive
Minimize labor supply disincentive effects	negative	negative

In other words, raising the income guarantee (G) improves the income of low income recipients, but raises transfer program outlays and harms labor supply incentives (the income effect in a standard static labor supply analysis). Raising b, on the other hand, has a negative impacts on the achievement of income adequacy (for households with some earnings but less than E_0) and labor supply[7] while reducing transfer expenditures.

This simple example illustrates that changes in transfer program parameters have differential effects on the achievement of transfer program objectives. Differential effects are inherent in the contradictory objectives of the transfer programs themselves. Careful judgement must be exercised in setting the levels of the income guarantee and the benefit reduction rate.

A More Realistic Case

This presumes the substitution effect is larger than the income effect for persons whose social assistance transfers are reduced.

Moving from the previous simple example towards a more realistic situation involves many possible considerations. To keep the presentation manageable, just four new considerations will be added at this point.

(1) Many different transfers may affect family income. It is convenient to classify income transfers into three broad classes: i) social assistance transfers (FSA) which are conditioned on the level of family income and (perhaps) other qualifying conditions, ii) social insurance transfers (FSI) which cover foreseeable contingencies such as old age, unemployment and disability and iii) other contingent transfers (FOC) which are received irrespective of family income when categorical qualifying requirements are satisfied, e.g. presence of children in the family.[8]

(2) Individuals as well as families are relevant economic units for receiving transfers. For most social insurance transfers the unit is the individual worker who establishes eligibility on the basis of work experience and receives the transfer when there is an interruption of earnings due to an insurable contingency. The contingencies include old age, unemployment, a work injury or the onset of disability (invalidity) from a non-work cause. Eligibility derives from labor market activity, and the benefit level reflects previous earnings, not family income.[9]

(3) Benefits are received in-kind as well as cash benefits. Rent subsidies, food stamps and health benefits all are received in-kind and pose questions of valuation vis-a-vis cash benefits. Because in-kind transfers are restricted to specified uses, they may have lower value to the recipient than an equivalent amount of cash transfers. The issue of the proper valuation of in-kind transfers will not be pursued in this paper.

(4) Cash and in-kind transfers are financed by more than one kind of tax. In particular, many economies finance social insurance transfers with payroll taxes levied on employers and/or workers.

Explicit recognition of these four considerations complicates the design of an efficient social welfare transfer system, but the same three goals remain. A well designed system must strive to provide adequate income to families, to minimize budget expenditures and to minimize labor supply disincentive effects. This more complex system must face issues of overlaps in the provision of transfers, gaps in program coverage and the compounding of marginal benefit offset rates and marginal tax rates.

A simplified system of equations to characterize this more complex situation is as follows.[10]

This three part categorization is the same as used by Barr (1991). The definition of income in this paper also follows his usage in that assets as well as the current income flow are considered in assigning eligibility for social assistance transfers.

There can be dependents' benefits, but both the basic benefit and the dependents' benefit are related to earnings not family income.

Since the number of variables in this equation system is larger it may be useful to provide a key. The first letters for variables identify the following categories: Y - family income, E - earnings, F - transfer payments, T - taxes, and G - the income level guaranteed by social assistance transfers. Subsequent letters are mnemonics to identify a particular subclass of these variables, e.g. FSA - social assistance transfers.

(1a) $$Y = E + FSI + FOC + FSA$$

(2a) $$FSI = FSI_0 = f(E \text{ lagged})$$

(2b) $$FOC = FOC_0$$

(2c) $$FSA = G - FSI - FOC - bE$$

(3a) $$YT = E + FSI + FOC + FSA$$

(3b) $$TY = t_y(YT - YT_0) \text{ if } YT > YT_0, \text{ otherwise } TY = 0$$

(3c) $$TSI = t_{si}E$$

(4a) $$YD = E + FSI + FOC + FSA - TY - TSI$$

A new variable in this second system of family income equations is taxable family income (YT) which is defined in (3a) as the sum of earnings plus the three types of transfers. It equals family income in (1a). Income is taxable when it exceeds a threshold level (YT_0). Two new parameters are the marginal income tax rate (t_y) and the social insurance tax rate on earnings (t_{si}).[11] Both taxes have constant marginal rates.

Many more assumptions must now be made explicit in this equation system because there are many more variables. Some assumptions are admittedly arbitrary while others may be controversial. Note the following ones. First, social insurance benefits and other contingent benefits both are counted in determining the level of social assistance transfers. Second, income taxes are levied on transfer payments as well as earnings when income exceeds the taxable income threshold (YT_0). Third, payroll taxes are levied on workers at a marginal rate (t_{si}) that commences with the first dollar of earnings and continues without an upper limit. Alternative assumptions could be made in all of these areas.

Several considerations in this more complicated transfer system are unchanged from the simple system of the previous section. There still is a guarantee level for social assistance transfers (G). There still are budget issues, but here multiple types of transfers and taxes are recognized.[12] There still are benefit reduction rates and marginal tax rates that may affect work incentives. For low wage workers the net effect of increased earnings must now recognize the marginal payroll tax rate as well as the benefit reduction rate for social assistance transfers. Achieving the three transfer program objectives (income adequacy, minimum budget expenditures and minimum labor supply distortions) is more complicated because it must now be attempted within a more complex environment of taxes and transfers.

The social insurance tax rate (t_{si}) is the sum of the employer rate plus the employee rate. This presentation, in other words, assumes the employer payroll tax is shifted fully backward onto the money wages of workers. This assumed incidence is the most likely, and it also makes the presentation of marginal tax rates straightforward.

Social insurance trust funds could be added since social insurance taxes and transfers are explicit variables in the set of equations.

In this system which recognizes social insurance as well as multiple types of transfer payments, a discussion of benefit overlaps, benefit offsets and the targeting of transfer payments can be instructive. The discussion is premised with assumptions that social assistance transfers are to be targeted on families truly in need and need is reflected in the level of family income. It is also assumed that the objective of minimizing total budget outlays on transfer payments is very important.

The preceding assumptions allow us to make the following observations.

(1) Receipt of social insurance transfers should be conditioned on the absence of substantial levels of current earnings. Someone receiving an unemployment, disability or retirement transfer (based on past labor market activity) is presumably not at work because of the indicated condition. Nonwork status is given concrete meaning by the absence of earnings or by a low level of earnings. Having substantial earnings should cause a diminution of benefits or a reduction of benefits to zero.

Two enforcement issues are present here. The first is the definition of "substantial." A retiree may have some earnings but be subject to an earnings (or retirement) test. Earnings above a threshold then cause benefits to be reduced at some marginal rate until the point is reached where benefits are reduced to zero. If earnings are zero, the full social insurance entitlement is received. The second is the issue of claimant fraud. If someone receives a disability (unemployment) transfer premised on full disability (unemployment) they should not have earnings at the same time. The fraud issue is more complicated if an employer colludes with a worker or if a worker is self employed, but having a system with earnings crosschecks will reduce fraud.

To monitor this system it is necessary to have individual identifiers for each person so that earnings records can be matched against lists of social insurance transfer recipients. Reducing benefits to those with substantial earnings will save on budget expenditures and target social insurance benefits more effectively. Note that the monitoring is done on individuals.

(2) Social insurance transfers and other conditional transfers should be considered in the calculation of countable income which is used to assign social assistance transfers to low income families. The determination of a rent subsidy, for example, must consider all social insurance transfers and other conditional transfers (children's allowances) as well as the current earnings of family members if it is to be most effectively targeted on the poor. Unemployment compensation and disability compensation should enter the countable income calculation. Making these offsets will substantially reduce total social assistance transfers.

(3) Use of the positive tax system, e.g., an income tax on families, can address a wider range of income equity issues than can social assistance transfers even when the latter have an optimal design. The ultimate lower limit on social assistance transfers is zero. Social assistance transfers cannot take away from family income if income is unusually high. An income tax with a broad definition of taxable income, on the other hand, can operate over the entire range of family incomes. Thus an income tax can "rake back" part of a children's allowance or any other transfer if the transfer is included in the definition of taxable income.

To summarize, three important issues in transfer program design have been identified. (i) The social insurance transfers should operate recognizing the interface between current earnings and the current receipt

of transfers to ensure that both are not occurring simultaneously. (ii) The determination of social assistance transfers should recognize a broad definition of countable income in determining the level of such transfers. (iii) The key issue of vertical income equity is best addressed with an income tax. Transfers should be included in the measure of income which determines income tax liabilities.